In today's dynamic business environment, large quantities of data are continuously generated. To manage the massive flow of data, businesses need high-capacity media that can provide fast writing and reading speeds without compromising reliability.

TDK LTO Ultrium 3 data cartridges offer large 400GB (800GB with 2:1 compression) capacity and a high-speed transfer rate of 80MB/s (160MB/s with 2:1 compression). TDK LTO Ultrium 3 is third generation media that meets the needs of all digitally networked businesses.

A leading manufacturer of recording media, TDK utilized its most advanced technologies and expertise to develop the industry's most reliable LTO Ultrium 3 data cartridges. As a testament to its unyielding quality, TDK LTO Ultrium 3 media was the world's first to pass strict certification testing by the CVE (Compliance Verification Entity), the organization responsible for certifying LTO standardization.

In addition to the D2406-LTO3 rewritable cartridge, TDK also offers the D2406W-LTO3, a new WORM (write once read many) type cartridge that cannot be erased or overwritten. This new media offers the same unsurpassed reliability that has made the D2406-LTO3 cartridge a top choice for mission-critical applications.

The ultimate high reliability media for write-once applications, TDK's WORM type cartridge prevents erasing or altering data. Large capacity and high-speed transfer ensure business efficiency.

Corporations, research organizations, medical institutions, government agencies and countless other entities must store a variety of documents as electronic data. Federal and state laws mandate that some of this data, such as public documents, electronic patient records and financial information cannot be erased or altered, and must be retained for a specified time period.

The D2406W-LTO3 WORM type (write once read many) cartridge has been developed to help prevent erasing or overwriting data that must be preserved. The D2406W-LTO3 is specially designed to withstand long-term data storage and repeated read cycles. Further, its two-tone blue-grey and light-grey colored cartridge makes the D2406W-LTO3 easily distinguishable from rewritable cartridges. The D2406W-LTO3 is the ultimate write-once media combining large capacity and high-speed transfer with unsurpassed reliability and a user-friendly cartridge design.

LTO MEDIA

SPECIFICATIONS TDK LTO ULTRIUM DATA CARTRIDGES

	D2406 400	D2406W 400	D2405 200	D2404 100	LTO UNIVERSAL CLEANING CARTRIDGE
CARTRIDGE COLOR	Blue-Gray	Blue-Gray & Light Gray	Purple	Black	Gray
CAPACITY	400 GB*	400 GB*	200 GB*	100 GB*	N/A
TRANSFER RATE	40-80 MB/s	40-80 MB/s	20-80 MB/s	20-40 MB/s	N/A
CARTRIDGE SIZE	4.0" x 4.15" x .85" (102mm x 105.4mm x 21.5mm)				
NUMBER OF TRACKS	704 data tracks	704 data tracks	512 data tracks	384 data tracks	N/A
DURABILITY	25,000+ load/unload	25,000+ load/unload	25,000+ load/unload	25,000+ load/unload	50 cleanings (DRIVE DEPENDENT)
CARTRIDGE MEMORY	4KB	4KB	4KB	4KB	4KB
DRIVE SYSTEM	Ultrium 3	Ultrium 3	Ultrium 2	Ultrium 1	Ultrium 1, 2 & 3
OPERATING TEMPERATURE	+10°C~+45°C	+10°C~+45°C	+10°C~+45°C	+10°C~+45°C	+10°C~+45°C
OPERATING HUMIDITY	10~80%RH**	10~80%RH**	10~80%RH**	10~80%RH**	10~80%RH**
OPERATING MAX. WET BULB TEMP.	+26°C	+26°C	+26°C	+26°C	+26°C
STORAGE TEMPERATURE	+16°C~+32°C	+16°C~+32°C	+16°C~+32°C	+16°C~+32°C	+16°C~+32°C
STORAGE HUMIDITY	20~80%RH**	20~80%RH**	20~80%RH**	20~80%RH**	20~80%RH**
STORAGE MAX. WET BULB TEMP.	+26°C	+26°C	+26°C	+26°C	+26°C

*Values are without data compression.
With 2:1 compression capacity and data transfer rate are doubled

LTO Ultrium 3
TDK LTO Ultrium Data Cartridge Series

www.tdk.com

UNIVERSAL CLEANING CARTRIDGES
Keep your Ultrium hardware in tip-top shape with a TDK Universal Cleaning Cartridge. There's no need to disassemble your drive; tape heads are easily, efficiently and thoroughly cleaned by this cartridge. It works with any Ultrium drive.

TIME SAVING LABELS
To increase your productivity, TDK offers EDP Ultrium labels. These labels are human-readable and include color-coding plus a bar code, ideal for data libraries and auto loaders.

TDK Electronics Corp.
901 Franklin Avenue
PO Box 9302
Garden City, NY 11530-9302

Phone/Web Support:
1-800-835-8273
www.tdksupport.com

* The TDK logo is a trademark or registered trademark of TDK Corporation.
* Linear Tape-Open, LTO, LTO Logo, Ultrium and Ultrium Logo are trademarks of Certance, HP and IBM in the US, other countries or both.
* Specifications and external appearance of products herein are subject to change without notice.
* The color of products shown herein and the actual products may vary slightly due to printing disparities
* The prices of items in this catalog are set by the retailer.
* Brochure produced in June 2005.

©2005 TDK Electronics Corporation Specifications subject to change. 2.5M 8.25x11 KODE

LTO MEDIA

LTO Ultrium 3
Data Cartridge 400/800GB

D2406-LTO3/D2406W-LTO3 (WORM type)

TDK is serious about reliability and performance. That's why our LTO Ultrium 3 media was the world's first to pass official certification testing. A large capacity 400GB/800GB data cartridge, TDK LTO Ultrium 3, is industry leading technology. The ideal storage solution for high-volume, mission critical networking environments is now even more reliable!

From Gigabyte to Terabyte capacity:
Forging ahead with higher density recording for LTO Ultrium data cartridges.

From its first generation featuring 100GB (200GB with 2:1 compression) capacity and 384 recording tracks, to the third generation with 400GB (800GB with 2:1 compression) capacity and 704 recording tracks, the LTO Ultrium format has realized considerable recording density increases. The LTO Ultrium roadmap includes a sixth generation with capacity further expanded to 3.2 Terabytes (6.4 Terabytes with 2:1 compression). TDK is engaged in ongoing research and development to ensure optimal performance for future generations of the LTO Ultrium format

LTO Ultrium Road Map

Generation	Ultrium 1	Ultrium 2	Ultrium 3	FUTURE LTO GENERATIONS Ultrium 4	Ultrium 5	Ultrium 6
Capacity (with compression)	100GB (200GB)	200GB (400GB)	400GB (800GB)	800GB (1.6TB)	1.6TB (3.2TB)	3.2TB (6.4TB)
Transfer rate (with compression)	10–20MB/s (20–40MB/s)	20–40MB/s (40–80MB/s)	40–80MB/s (80–160MB/s)	80–120MB/s (160–240MB/s)	120–180MB/s (240–360MB/s)	180–270MB/s (360–540MB/s)

Quality checks and instant production tracking facilitate reliability.

TDK data cartridges are produced in a meticulously controlled clean production environment. They undergo a series of exacting quality checks during production and shipment. TDK's exclusive production tracking system further helps facilitate the high reliability of TDK LTO Ultrium data cartridges.

Ultimate tape reliability is achieved through close cooperation with drive manufacturers.

Because TDK specializes in recording media, the company develops its data cartridges for compatibility with all drive models. From the initial stages of development, TDK exchanges tape and cartridge design information with drive manufacturers to ensure the creation of recording media is optimized for the broadest range of hardware. In the case of the LTO Ultrium 3 data cartridge, its open exchange procedures enabled TDK to become the world's first manufacturer to pass strict certification testing by the CVE (Compliance Verification Entity), the organization that certifies LTO standardization.

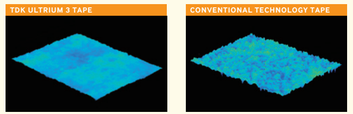
LTO Ultrium 3
Data Cartridge 400/800GB

Finer Super Finavinx metal particles will be packed in higher density.

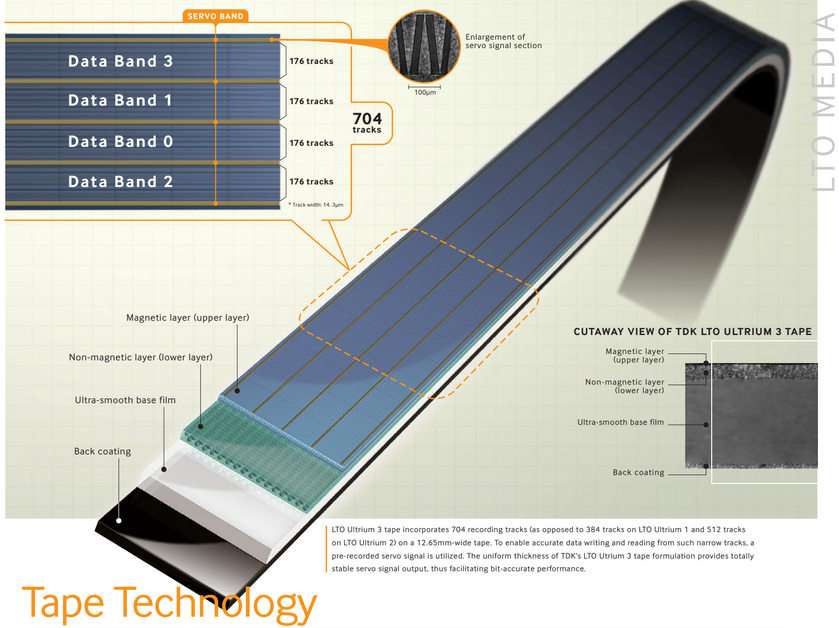
The recording material is a key component in facilitating optimal media performance. In the case of magnetic tape, higher recording density mandates finer magnetic particles. Through uniform dispersion of the particles on the tape and high-density packing, stable output is obtained. TDK uses ultra-fine Super Finavinx metal magnetic particles specially designed for each respective LTO Ultrium format. The company is actively engaged in developing materials to be used in next-generation LTO Ultrium media, which will have even higher recording density.

Original ultra-thin dual-layer coating technology boosts precision.

To realize higher density, shorter wavelength recording, the magnetic layer's thickness must be reduced. To achieve this, TDK has perfected its exclusive, ultra-thin dual layer coating technology. The technology provides an outstanding magnetic coating with extremely uniform thickness. The uniform thickness eliminates output fluctuations (spacing losses) that can be caused by gaps between the tape surface and the read head.



LTO MEDIA



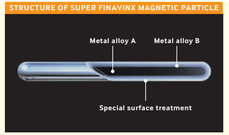
CUTAWAY VIEW OF TDK LTO ULTRIUM 3 TAPE
Magnetic layer (upper layer)
Non-magnetic layer (lower layer)
Ultra-smooth base film
Back coating

LTO Ultrium 3 tape incorporates 704 recording tracks (as opposed to 384 tracks on LTO Ultrium 1 and 512 tracks on LTO Ultrium 2) on a 12.65mm-wide tape. To enable accurate data writing and reading from such narrow tracks, a pre-recorded servo signal is utilized. The uniform thickness of TDK's LTO Utrium 3 tape formulation provides totally stable servo signal output, thus facilitating bit-accurate performance.

Tape Technology

Featuring 704 data tracks arrayed on a 12.65mm wide tape, high-reliability TDK LTO Ultrium 3 media reads and writes data with absolute precision.

STRUCTURE OF SUPER FINAVINX MAGNETIC PARTICLE

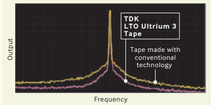


Use of Super Finavinx metal particles with even finer particle size.
Exclusive ultra-fine Super Finavinx metal particles deliver performance and reliability. Designed specially for LTO Ultrium 3 tape, TDK's ultra-fine, next-generation Super Finavinx metal magnetic particles are utilized. The particles feature an exclusive three-layer structure that achieves high output power and outstanding resistance to aging. Stable output characteristics are realized.

CONCEPTUAL DIAGRAM OF TWO-LAYER COATING

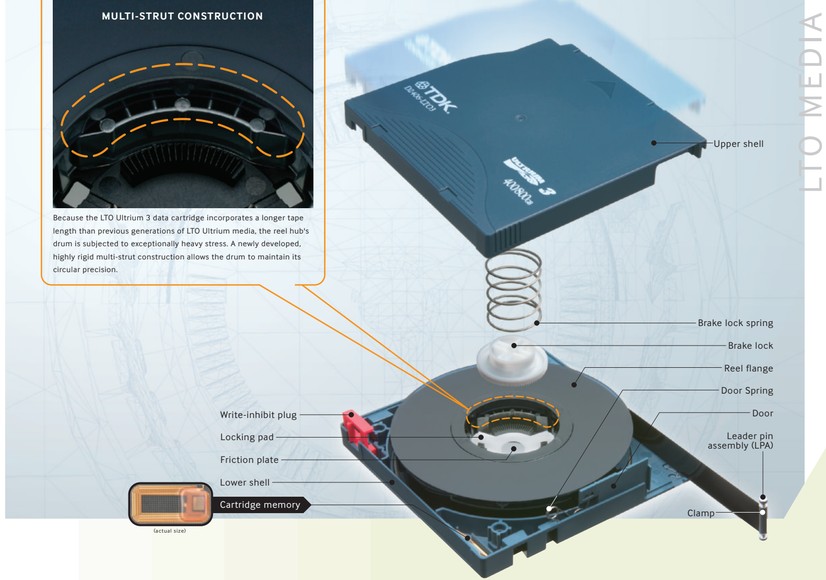
High precision ultra-thin dual-layer coating technology provides stable output characteristics.
Created with unique dual-layer tape coating technology, TDK LTO Ultrium 3 media features a base film that serves as the foundation for an ultra-smooth non-magnetic first layer and a magnetic top layer. Because the thickness of the magnetic top layer is uniform to the nano order, high reliability and stable output are realized.

NOISE SPECTRA



Ultra-smooth magnetic surface achieves high S/N ratio while ensuring low error rate characteristics.
TDK's ultra-fine Super Finavinx magnetic particle and thin film dual-layer coating technologies form a magnetic layer with outstandingly uniform thickness. The smoothness of the magnetic surface eliminates spacing losses. A high signal to noise ratio (S/N) is realized, promoting low error rate characteristics.

LTO MEDIA

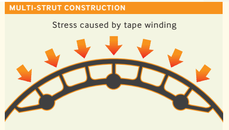


Because the LTO Ultrium 3 data cartridge incorporates a longer tape length than previous generations of LTO Ultrium media, the reel hub's drum is subjected to exceptionally heavy stress. A newly developed, highly rigid multi-strut construction allows the drum to maintain its circular precision.

Cartridge Technology

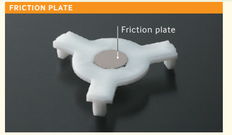
High-precision tape mechanism featuring multi-strut reel hub provides optimal tape performance.

MULTI-STRUT CONSTRUCTION



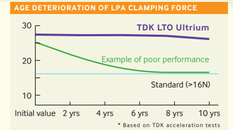
Multi-strut reel hub ensures drum's circular precision.
It is important for the reel hub's drum to maintain circular precision. TDK's innovative molding technology limits the aberration from straightness of the drum surface to below one-fourth of the standard specifications. Featuring multiple supporting pillars that reinforce the wall of the drum, TDK's multi-strut construction suppresses tape shaking to ensure stable head contact.

FRICTION PLATE



Hard metallic friction plate provides outstanding abrasion resistance and ensures stable rotation.
The locking pads, which supports the rapidly rotating reel, incorporates a specially treated hard metal friction plate that boasts minimal resistance with the contact areas of the brake lock. This ensures high rotational precision and contributes to a stable tape run.

AGE DETERIORATION OF LPA CLAMPING FORCE



Ultra-precise LPA mechanism features high clamping strength.
The LPA (leader pin assembly), which serves as the drive's access point, delivers unrivaled precision, with aberration less than one-fifth that of the standard specifications. What's more, the perpendicularity aberration between the leader pin and leader tape is less than one-half that of standard specifications. High clamping strength is maintained to realize stable performance and withstand the rigors of repeated loading and unloading.